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REMARKS

Claims 1-20 are pending in the application. Claims 1-8, 12-13, 15-17, 20 are amended. Amendments to Claims 7, 15 corrected the typing mistakes specified by the Patent Office in item 1 of the Office Action. Claims 1, 3-8, 12-13, 15-17, and 20 were amended to comply with 35 USC 112 second paragraph (item 2 of the Office Action). Claims 5 and 19 were amended to comply with 35 USC 112 second paragraph (item 3 of the Office Action).

Claims 1-7, 9, 11 were rejected under 35 USC 102(b) over U.S. Patent 5,824,992 to Nagarajan et al. ("Nagarajan"). Applicants assert that the rejection is improper and should be withdrawn.

1. In order to be anticipatory under section 102(b), a single reference must disclose each and every element of the claimed invention¹. Those elements must be either inherent or expressly disclosed², and they must be arranged as in the claim³. For anticipation, there must be no difference between the claimed invention and the references disclosed, as viewed by a person of ordinary skill in the field of the invention⁴.

Turning now to amended independent Claim 1 with the above-articulated legal standard in mind, Applicants' attorney was unable to find in Nagarajan each and every element of the claimed invention arranged as in amended Claim 1. More specifically, amended Claim 1 claims a metal cored wire in which the core composition is alloyed with one or more elements, such as Cr, Mo, V, W, Hf, and Nb, in which the percentage of all alloying elements in the core doesn't exceed 1% and in which the core fill percent is larger than 12%. Nagarajan discloses a number of wire compositions, listing 7 examples of core compositions (Col. 4, lines 18-25 (Ex. 1), lines 56-64 (Ex. 2), Col. 5, lines 29-49 (Ex. 3), Col. 6, lines 3-8 (Ex. 4), Col. 7, lines 11-19 (Ex. 5), lines 57-64 (Ex. 6) and Col. 8, lines 28-35(Ex. 7)). Examples 1, 4 and 7 don't disclose a single alloying element claimed in Claim 1, so they can't be anticipatory. Example 5 discloses Cr

¹ *In re Paulsen*, 31 USPQ2d 1671, 1673 (Fed. Cir. 1994)

² *Constant v. Advanced Micro-Devices*, 7 USPQ2d 1057 (Fed. Cir. 1988)

³ *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913 (Fed. Cir. 1989)

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(2.3%) and Mo (2.3%), which is contrary to the claimed limitation that the percentage of an alloying element or a combination of the alloying elements should not exceed 1%. Therefore, Example 5 cannot be anticipatory. Examples 2 and 3 disclose Cr and Mo as alloying elements, but the fill percentage does not exceed 12%, contrary to the limitation of the core fill percent being larger than 12%, as claimed in amended Claim 1. Therefore Examples 2 and 3 cannot be anticipatory. The remaining Example 6 discloses Cr as an alloying element at 0.75%, but only for the 10% fill, which is contrary to the limitation of the fill percentage exceeding 12% as claimed in amended Claim 1. Therefore, after considering each disclosed core composition in Nagarajan, Applicants assert that none of the disclosed compositions contains all the limitations of the invention as claimed in Claim 1 and arranged as in Claim 1.

Moreover, the Patent Office stated that Nagarajan discloses the core composition comprising "generally between approximately 13-45% of the total wire weight". That language in Nagarajan (Col. 1, lines 17-22) is a general background language that doesn't have anything to do with the limitations of Claim 1 claiming the present invention. That background language in Col. 1 states generally that a core of a metal cored wire can have a 13%-45% fill. It does not disclose anything else relating to a core composition, its alloying elements and the percentage of the alloying elements in the core. A general broad statement that some wires can have a core fill percent of 13%-45% without a disclosure of exactly what the compositions of those wires are cannot satisfy the requirement that all the elements of a rejected claim must be either inherent or expressly disclosed in the patent, and that the elements must be arranged as in the claim. In the Nagarajan, all disclosed core compositions have an express limitation of not exceeding a core fill 12%. No disclosure of a wire having a core of the elemental composition and the fill percent as arranged and claimed in Claim 1 could be found in Nagarajan. Therefore, the Patent Office did not meet its burden of proof that independent Claim 1 is anticipated by Nagarajan. Withdrawal of this rejection and allowance of Claim 1 is respectfully requested.

⁴ Scripps Clinic & Research Found. V. Genentech, Inc., 18 USPQ2d 1001 (Fed. Cir. 1991)

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2. With regard to independent Claim 7, all of the arguments presented in section 1 above are repeated and asserted in support of withdrawing its rejection under section 102(b). Independent Claim 7 claims an improved productivity weld wire having a core composition alloyed with one or more elements, such as Cr, Mo, V, W, Hf, and Nb, wherein the fill percent of the core exceeds 12% and wherein a deposition rate of the weld wire increases with the increase of the fill percent. In addition to the arguments presented in section 1, Applicants respectfully assert that no mention of a relationship between a deposition rate and a core fill percent could be found in Nagarajan. Therefore, there can be no anticipation of independent Claim 7 by Nagarajan. Withdrawal of the rejection and allowance of Claim 7 is respectfully requested.

Claims 2-6 depend off allowable Claim 1 and should be allowable. Claims 9 and 11 depend off allowable Claim 7 and should be allowed. Allowance of Claims 2-6, 9 and 11 is respectfully requested.

3. Claims 8 and 10 were rejected under 35 USC 103(a) over Nagarajan over U.S. Patent 5,332,628 to Drossman ("Drossman"). Applicants respectfully assert that the Patent Office has not met its burden of establishing a *prima facie* case of obviousness and therefore the rejection is improper.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the reference (or references when combined) must teach or suggest all the claim limitations⁵.

Upon examination of each of the three legal requirements of the *prima facie* case of obviousness in view of the Patent Office's rejection of Claims 1-10, Applicants assert that the Patent Office has satisfied none of the three requirements. With regard to the final requirement, Nagarajan and Drossman combined do not teach or even suggest all limitations of Claim 8 or Claim 10. No mention or even suggestion of an increase of a deposition rate with an increase of a

⁵ MPEP 2142-2143

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core fill percent could be found in either Nagarajan or Drossman, as claimed in Claim 7 off which Claims 8 and 10 depend. Also, Drossman does not disclose any compositions of a core of a metal cored wire. In Col. 2, lines 45-50 Drossman discloses the resulting composition of the core and sheath together without specifying the compositions of the core, as claimed in Claims 8 and 10 by their dependency off Claim 7. Nothing in the combination of Nagarajan and Drossman discloses or suggests a core composition and a fill percentage of the core together with a specified relationship between the deposition rate and the fill percent as claimed in Claims 8 and 10. Therefore, the Patent Office did not satisfy the final requirement of the *prima facie case* of obviousness with regard to those Claims.

Consequently, logically, there can be no objective evidence found on the record that the two patents can be combined to come up with the invention claimed in Claims 8 and 10. Similarly, no reasonable expectation of success of combining the cited Nagarajan and Drossman to come up with the invention claimed in Claims 8 and 10 could be found in the cited patents, since they don't even disclose or suggest all the limitations of the invention claimed in Claims 8 and 10. The Patent Office has not met its burden of proof to establish a *prima facie case* of obviousness with regard to independent Claims 8 and 10. Applicants respectfully ask the Patent Office to withdraw the obviousness rejection and allow Claims 8 and 10.

4. Claims 12-15 were rejected under 35 USC 103(a) over Nagarajan over U.S. Patent 4,593,174 to Saito et al. ("Saito"). Applicants respectfully assert that the Patent Office has not met its burden of establishing a *prima facie case* of obviousness and therefore the rejection is improper.

In particular, all the arguments presented in section one is repeated and incorporated here with regard to independent Claim 12. Claim 12 is directed to a metal cored wire for use in welding at specified travel speeds, in which the core composition is alloyed with one or more elements, such as Cr, Mo, V, W, Hf, and Nb, in which the percentage of all alloying elements in the core doesn't exceed 1% and in which the core fill percent is larger than 12%. Similar to the argument in section 1, each and every element of Claim 12 could not be found in Nagarajan.

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Saito does not supply the missing limitations, nor does it suggest or hint to such missing limitations. Therefore, the Patent Office did not satisfy its prima facie case of obviousness with regard to Claim 12.

Claims 13-15 depend off allowable Claim 12 and should be allowed. Allowance of Claims 13-15 is respectfully requested.

5. Claims 16-20 were rejected under 35 USC 103(a) over Nagarajan over U.S. Patent 3,800,405 to Ziemek ("Ziemek"). Applicants respectfully assert that the Patent Office has not met its burden of establishing a prima facie case of obviousness and therefore the rejection is improper.

Applicants repeat arguments provided in this response in section 1 and incorporates them herein with regard to independent Claim 12. Nagarajan does not teach manufacturing the wire by filling the sheath with a metal powder having a core composition alloyed with one or more elements, such as Cr, Mo, V, W, Hf, and Nb, in which the percentage of all alloying elements in the core doesn't exceed 1% and in which the wire is drawn to the core fill percentage larger than 12%, as claimed in independent Claim 16. Ziemek does not disclose or teach or even suggest the missing limitations. Therefore, the Patent Office did not satisfy its prima facie case of obviousness with regard to Claim 16.

Claims 17-20 depend off allowable Claim 12 and should be allowed. Allowance of Claims 17-20 is respectfully requested.

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CONCLUSION

For the foregoing reasons, Applicants believe this application is in condition for allowance which is respectfully requested. Please contact the undersigned attorney with any questions regarding this application and pending Claims to expedite their allowance.

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Respectfully submitted,

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